

In the Claims:

1. (Previously presented) An apparatus comprising:

an input stage with

an NMOS transistor doublet having a first differential input for receiving input signals,

a PMOS transistor doublet having a second differential input for receiving input signals, and

a plurality of switches for receiving and selectively directing analog input signals only to one of either said first differential input or said second differential input responsive to a switching signal and for connecting the other one of the first and second differential inputs to a reference voltage responsive to the switching signal, whereby the input stage is configured to keep the ratio of the transconductance of the NMOS transistor doublet and the transconductance of the PMOS transistor doublet constant.

2. (Previously presented) The apparatus of claim 1, wherein the plurality of switches direct the analog input signals to said first differential input if the input signals have positive gamma data and to said second differential input if the input signals have negative gamma data.

3. (Previously presented) The apparatus of claim 1, wherein the NMOS transistor doublet comprises two NMOS transistors, each having a gate, whereby the gate of the first of the two NMOS transistors is connectable to a first input node via a first switch of the plurality of switches and the gate of the second of the two NMOS transistors is connectable to a second input node via a second switch of the plurality of switches, the PMOS transistor doublet comprises two PMOS transistors, each having a gate, whereby the gate of the first of the two PMOS transistors is connectable to the first input node via a third switch of the plurality of switches and the gate of the second of the two PMOS transistors is connectable to the second input node via a fourth switch of the plurality of switches.

4. (Previously presented) The apparatus of claim 3, wherein the gate of the first of the two NMOS transistors is connectable, via a fifth switch of the plurality of switches, to a first reference node being biased with a first reference voltage, and the gate of the second of the two NMOS transistors is connectable to the first reference node via a sixth switch of the plurality of switches, and the gate of the first of the two PMOS transistors is connectable, via a seventh switch of the plurality of switches, to a second reference node being biased with a second reference voltage and the gate of the second of the two PMOS transistors is connectable to the second reference node via an eighth switch of the plurality of switches.

5. (Previously presented) The apparatus of claim 1, wherein the input stage is a rail-to-rail input stage.

6. (Previously presented) The apparatus of claim 4, wherein the input stage is configured to keep the NMOS doublet active when the analog input signals are directed to the second differential input and to keep the PMOS transistor doublet active when the analog input signals are directed to the first differential.

7. (Previously presented) The apparatus of or claim 1, wherein said switching signal is a digital switching signal.

8. (Previously presented) The apparatus according to claim 1, wherein transistors serve as the switches.

9. (Previously presented) The apparatus of claim 1 wherein the NMOS transistor doublet and the PMOS transistor doublet are part of a folded cascode rail-to-rail input stage and wherein the folded cascode rail-to-rail input stage is connected to a second stage comprising a rail-to-rail output stage amplifier.

10. (Previously presented) An apparatus comprising:

a source driver bank with a plurality of input stages, each input stage having
an NMOS transistor doublet having a first differential input for receiving
input signals,
a PMOS transistor doublet having a second differential input for receiving
input signals, and
a plurality of switches configured and arranged to, in response to a
switching signal, direct analog input signals to one of the first and second differential
inputs and to connect the other one of the first and second differential inputs to a
reference voltage, to set the ratio of the transconductance of the NMOS transistor doublet
and the transconductance of the PMOS transistor doublet constant; and
a bus for receiving input signals.

11. (Previously presented) The apparatus of claim 10, further comprising a gate driver
bank and an LCD panel.

12. (Previously presented) The apparatus of claim 10, further comprising a control signal
generator for generating the switching signal.

13. (Previously presented) The apparatus of claim 10 being part of a panel module.

14. (Previously presented) An apparatus comprising

an input stage with an NMOS transistor doublet having a first differential input
for receiving input signals, a PMOS transistor doublet having a second differential input
for receiving input signals, and a plurality of switches for receiving and selectively
directing analog input signals only to one of either said first differential input or said
second differential input responsive to a switching signal and for connecting the other
one of the first and second differential inputs to a reference voltage responsive to the
switching signal, wherein the input stage is configured to operate in either a first mode or
a second mode responsive to the switching signal, and the NMOS and PMOS transistor

doublets are both kept active in each of the modes, and wherein the plurality of switches are configured, in the first mode, to direct the analog input signals to the first differential input and to connect a first reference voltage to the second differential input, and the plurality of switches are configured, in the second mode, to direct the analog input signals to the second differential input and to connect a second reference voltage to the first differential input, and whereby the input stage is configured to keep the ratio of the transconductance of the NMOS transistor doublet and the transconductance of the PMOS transistor doublet constant.

15. (Previously presented) The apparatus of claim 1, wherein the first differential input is formed by the gates of the NMOS transistor doublet and the second differential input is formed by the gates of the PMOS transistor doublet.

16. (Previously presented) The apparatus of claim 1, wherein the plurality of switches are configured to selectively direct input signals to one of the differential inputs, and to connect the other one of the differential inputs to a reference voltage, to keep the transconductance ratios of the NMOS and PMOS transistor doublets constant.

17. (Previously presented) The apparatus of claim 14, wherein the plurality of switches are configured to selectively direct input signals to one of the differential inputs, and to connect the other one of the differential inputs to a reference voltage, in each of the first and second modes to keep the transconductance ratios of the NMOS and PMOS transistor doublets constant.